THE

Principal Types of Physical Training Compared.

BY

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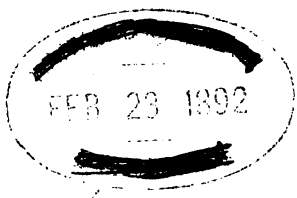
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With the Writer's Compliments.

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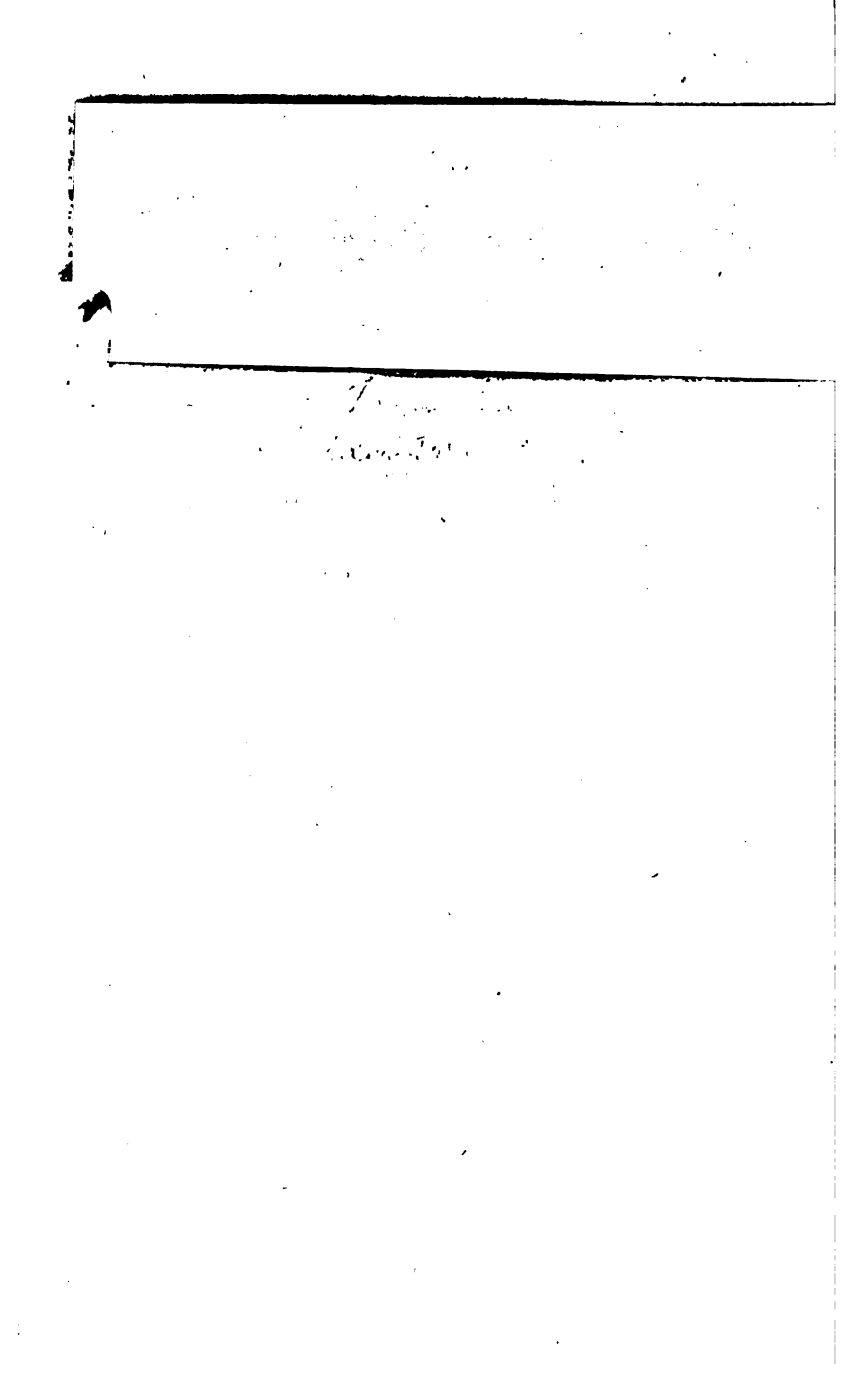

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methods in accordance with the plain teachings of experience and of modern science as to the interdependence of body and mind.

At our later meetings we have considered the more salient features of what may be denominated the most representative and typical forms of physical exercise or training. These are five in number and may be styled: the Grecian; the Mediæval; the British; the German; and the Ling or Swedish. We have also discussed the nature and effects of muscular exercise, from the standpoint of modern physiology, in order to secure a standard or criterion, by which to estimate the hygienic and educational value of any particular system of exercise.

In comparison with the five main types or national systems of exercise, mentioned above, all other schemes and so-called systems of physical education, seem to me, to be fragmentary, anomalous, and insufficient. Provided we apprehend the lessons of experience and the teachings of science with regard to the essential character and comparative worth of the results attained by each of these national systems of bodily education, we shall be able to classify and criticise, with approximate justness, the numerous varied, and often fantastic, new and local schemes of exercise, whose inventors and partisans are on every hand clamoring loudly and insistently for recognition and patronage. I shall not consider them further, as it is not my purpose in these lectures to attempt to bolster up or pull down any local idol that has gained a hierarchy or worshippers for itself, either in this city or in the country at large.

A twofold comparison of the systems whose origin and more obvious external features have thus far occupied our attention, seems to me to be desirable. I propose, therefore, to compare them, in the time which remains to me, first from the historical point of view, in order to discover the place and influence attained by the five typical systems in the life and history of

those nations which have originated or adopted them; and in the second place, to compare them as regards their fitness to realize the true ends of bodily education, taking as my criterion so much of the modern doctrine of the nature and effects of exercise as seems necessary for my purpose.

It will be convenient to use the terms *agonistic*, *gymnastic* and *athletic*, in speaking of the most general features of the five types of physical training under review, these terms being derived from Grecian usage. An *ἀγών*, you remember, meant originally an assembly, then an assembly to witness a contest of some sort. For instance, the Olympic games were gymnic *agones*, being so-called because the contestants in them were naked; then there were musical and hippic *agones* also. The prizes given to victors in an *ἀγών* were termed *ἆθλα*, and an *athlete* was a winner or contestant simply; later, in its worse sense, an *athlete* was a *prize-fighter*, governed by professional and mercenary ends. A gymnast was a trainer primarily, especially after the agonistic games had become systematized and regulated, and were practised as a necessary part of the education of every free-born youth.

Greek physical training was, then, *agonistic*, during the period of its growth, when its main purpose was to afford sport or pastime; it was *gymnastic* during the period of its best estate, about the time of Pericles, when its aims were distinctly educational and ethical; and it became *athletic*, in the worse sense of the word, during the decadence of the institutions and independent life of the Greeks when a spirit of mercenary self-seeking and professionalism dominated both gymnasts and athletes.

Using these terms, in the sense above indicated, we should call the martial exercises of the ancient Gauls and Teutons, agonistic. Out of these sports and exercises were developed the physical training of the young page and squire, and the chivalric tournaments

and jousts to which the knights of Italy, France, Germany, England and Scandinavia were so devoted in feudal times. That training and these contests were partly agonistic and partly athletic in their nature. The same terms may be applied to British sports. They were agonistic and have become chiefly athletic, within the last seventy-five or one hundred years. Athleticism is the dominant note in all British physical training, which has but little of pedagogical aim or method in it, and is less deserving of being called gymnastic than was the mediæval kind of physical training. German turning is somewhat agonistic in its nature, though its aims and methods are in the main gymnastic. No system of physical training, ancient or modern, so well deserves the name of gymnastic as the Swedish system, which has, perhaps, too little of the athletic element in it. In the Swedish gymnastics, moreover, we find medical gymnastics more highly developed and accorded a higher place than in any other system of physical training. Indeed, excepting the Grecian, there is, properly speaking, no system of medical gymnastics, worthy the name, to be found outside of the Swedish gymnastics.

Taine has well said, in his "English Notes," "In every age, under every civilization, a people is always itself. Whatever be its dress, goat-skin, blouse, gold-laced doublet, black dress-coat, the five or six great instincts which it possesses in its forests follow it in its palaces and offices." Of these great instincts, the play instinct is one of the most ineradicable. To this instinct of the barbarian and the child, as to a primitive germ, we may trace more or less directly every national or tribal system of bodily training. Ball-games, contests in running, jumping, lifting and casting of weights, hurling a tree-trunk or a beam and wrestling, are sports which have never ceased to be practised in one form or another, as popular pastimes and means of exercise, from Homer's time to our own.

In many an out-of-the-way corner of Europe, especially in remote islands and secluded mountain-districts, you may find to-day one or another of the ancient pastimes still popular and played according to immemorial custom,— often on the anniversaries of ancient heathen festivals, which the Church has never been able to render wholly Christian, although most of them have been duly christened. The ancient sports have undergone least change in such regions as the Scottish Highlands, the Lake Country of England, outlying districts such as Friesland and Gothland, and the valleys of the Alps, Tyrol and Pyrenees.

If we attempt to trace our typical systems of physical exercise to their original forms, we find them beginning either in childish plays, or in games which are akin to such plays. The Grecian gymnastics and athletics developed directly out of such pastimes as Ulysses and Ajax engaged in around the funeral pyre of Patroclus, which Achilles instituted in honor of his playmate and comrade. Jahn adopted several of the ancient German games in his turning system; and Ling wrote about the sports of the ancient Norsemen, though he gave them no very prominent place in his gymnastic system. British sports are the most highly developed modern expression of the play instinct. It is a significant fact that French, Swedish and even some German educators are now endeavoring to domesticate British sports, in order to incorporate an athletic element in their more systematic and refined forms of physical training; though it has been truly pointed out by foreigners, that "English school-boys play at their work, and work at their play," when judged by continental standards.

The words play and exercise were quite synonymous in the early days of our English speech, the ancient Teutonic word *plega*, play, being applied to all sorts of warlike exercises. For instance, we find it in such forms as *linden-plega*, play of shields, *sweardu-plega*, sword-play. The Anglo-Saxon translated the Latin

gladiator into *plegere* or *plegeman*, meaning player. In Bede's "Ecclesiastical History," one finds that the priest was forbidden to hunt, hawk, or dice, but was charged "to play with his book, as became his condition." In the time of Henry the Eighth, "plaienge att weapons" was still a necessary branch of the education of young noblemen. Sword-play and cudgel-play still retain their ancient meaning of practice as well as of amusement.

Hodgetts, in his "The English in the Middle Ages," recounts the story, given in the "Edda," of the death of Baldur, the sun-god, by means of an arrow made of mistletoe, on which the traitorous Loki was sitting in the shape of a white crow, at the time Nanna, the bride of Baldur, obtained the promise of all nature, but the mistletoe, not to injure her spouse. So, when the gods of Valhalla instituted a game, which consisted in throwing their spears, javelins and arrows at Baldur, who was placed with his back against the holy-tree, that is, the holly-tree, Loki managed to have Höder, the blind twin-brother of the shining one, shoot the arrow of mistletoe at Baldur, who was unscathed by the missiles of the other gods. Baldur was killed by the arrow of mistletoe, which had first transfixed the cock, which flew up to intercept the arrow, and has been sacred to Baldur ever since.

"I only refer to this myth," said Hodgetts, "to show you where to look for the origin of the early English or Anglo-Saxon archery games, their casting the bar and javelin at a figure armed as a warrior, and the custom of shooting at the cock at Easter." Cock-throwing was, till rather recent times, I may add, a customary game among British school-boys at Shrove-tide.

The old English custom of playing certain games in the church-yard, and even the church itself, had doubtless a pagan origin. Among certain "Instructions for Parish Priests," dating from the middle of the fifteenth century, we find one with regard to profanation

" wyth-ynne chyrche seyntwary " which runs as follows:

> " Songe and cry and suche fare,
> For to stynte thow schalt not spare;
> Castynge of axtre and eke of ston,
> Sofere hem ther to vse non;
> Bal and bares and suche play,
> Out of chyrcheyorde put a-way;
> Courte holdynge and suche maner chost,
> Out of seyntwary put thow most."

Archery, under the name of artillery, was for many centuries a common exercise in England, being particularly protected by statute, even as late as the time of Henry VIII, when every village, and many schools, had butts for archery practice. In a law of Richard II, passed in 1388, it is enacted that "Servants and Labourers shall have Bows and Arrows, and use the same the Sundays and Holydays, and leave all playing at Tennis or Football and other games called Coits, Dice, Casting of the Stone, Skittles, and other such importune Games." Though the above contains no mention of church-yard games as such, it was held, long after the reign of Richard II, that "The Lord of the Manor may not, by custom, plough or break up two acres of land lying near the church, because it was anciently granted for the recreation of the youth, after evening service on every Lord's Day." King James I, being a hater of Puritanism and its kill-joy tendencies, in 1618 issued a proclamation known as "The King's Book of Sports," in which he declared his pleasure to be, "that after the end of Divine Service our good people be not disturbed, letted or discouraged from any lawfull recreation, such as dancing, either of men or women, archery for men, leaping, vaulting, or any other such harmless Recreation, nor from having May Games, Whitson-ales, and Morris-dances, and the setting up of Maypoles, and other sports therewith used, so as the same be had in due and convenient time, without impediment or neglect of Divine Service." In 1633 Charles I reissued the "Book of Sports."

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public-school graduates are wont to be called. The British boy has forced his masters to give him time and space for his games, — often at the expense of the course of study. It is doubtful if school and college athletics will ever be properly managed in this country, before a generation of teachers, presidents and trustees shall arise who have enjoyed the advantages of athletic training in their youth.

It is quite impossible for me to undertake to trace, within the limits at my disposal, the remarkable growth and transformation of certain sports, even in the single field occupied by the great English schools; or to note the influences which have served to intensify and spread the revival in athletics, which had its beginnings just after the close of the Crimean War and at the inception of the Volunteer movement in 1860; or to account for the changes due to the leaps and bounds with which athletics have advanced and are still advancing in England and Scotland. Even, to attempt to convey an idea of the extent to which boys and men of all classes engage in the three great British games of foot-ball, cricket and rowing, not to speak of lawn-tennis, hare-and-hounds, bicycling and the sports technically known as track-athletics; or of the amount of money contributed by the favored classes, in order to provide the sons of toil, as well as themselves, with play-grounds, swimming-baths, and gymnasia, would take me too far afield. I must content myself, therefore, with directing your attention to the fact that many of the sports now in vogue were considered vulgar and were played but little, even by school-boys, a century ago; that strength and endurance rather than skill and address are the qualities most prized and worked for; that British sports are eminently social and are less marked by class distinctions than formerly; and that more interest is shown in contests between teams and clubs than in matches between individuals.

Demeny, a French physiologist, and a member of the commission appointed by his government to devise

a rational code of gymnastics for use in the schools of France, urges most forcibly that athletic sports do not and cannot constitute a complete physical education. I hold this to be true of British, as of all athletics; but Demeny's further statement, that, "Games and sports are still what they always have been — an elegant means of amusement, an agreeable form of exercise, the privilege of the easy class, the pleasure of the smallest number," seems to me less applicable to the sports and games of Britain than to those of every other country. Indeed, the scope of all forms of modern physical training is wider and more truly popular than was the case in either feudal or ancient times, inasmuch as members of the privileged classes only were allowed to take part in the Grecian games or the brilliant mimic warfare of the mediæval tournaments. The sports of the Roman arena, in which the contestants were mostly slaves or prisoners of war, do not constitute a real exception to this statement, since the Roman gladiators and athletes were, like our base-ball players and circus acrobats, mere professionals whose function was to amuse the populace.

Team-matches and class exercises are distinctively modern inventions; the prizes in most forms of ante-modern contests being adjudged to individual victors. There were, to be sure, certain games among Grecian youth in which "sides" strove with each other; and, in the knightly tournaments, squadron charged squadron in the lists; but these, like the ancient foot-ball and hockey games, in which parish fought against parish, were rather mass than team contests, since the sides were at best only rudely organized, and there was little or no division of labor among the contestants. Team athletics, I repeat, have reached their highest development in cricket, base-ball, foot-ball and rowing, in comparison with which the class exercises of the Swedes and Germans, which oftentimes involve the simultaneous action of large numbers of persons, are unspecialized.

As regards length of days, British sports come next

to the Grecian games, even if we do not venture, as does Hodgetts, to date them from the games of the Aesir in Valhalla. The tournaments and jousts of the Middle Ages lasted scarcely 400 years; German turning took its rise in the last quarter of the last century; Swedish gymnastics have not reached their ninetieth birthday; but the history of the Grecian games extends over nearly 1,400 years, from the days of Homer, if there were a Homer, till 394 A. D., the date assigned to the last celebration of the Olympic games.

In the breadth and sanity of its aims; in the magnitude of its proportions and the completeness of its development, as a national institution; in the perfection of its organization; in the splendor and solemnity of its festivals; in its many-sided and abiding influence; as well as in the length of its history and the brilliancy of its record, the physical training of the Greeks has no parallel. Its history forms a coherent whole, presenting well-marked phases of growth, culmination and decay, and reflects at every stage the spirit of the nation. Athletic contests entered into the worship of Greek gods and heroes; and the lapse of time was reckoned in Olympiads to mark the recurrence of the principal sacred games. Gymnastics were assigned an enlarged and honorable place in the training, for peace and war, of every free-born boy and youth. The codes of Lycurgus and Solon provided for the organization and regulation of bodily training; and the management of it, during its best estate, afforded positions of honor and emolument to distinguished and ambitious men. It furnished themes for poets, philosophers and historians; sculptors and painters sought the palæstra and gymnasium for their fairest models; and even the greatest of Greek physicians thought it no condescension to study and adopt exercises and procedures which had been originated by paidotribes and gymnasts.

In Guhl and Koner's "The Life of the Greeks and Romans," we find the gymnasia mentioned first among the public buildings of Greece, because they were

"centre-points of Greek life." The authors go on to say: "Games and competitions formed a chief feature of their religious festivals. This circumstance reacted both on sculpture and architecture, in supplying the former with models of ideal beauty, and in setting the task to the latter of providing suitable places for these games to be celebrated. For purposes of this kind the palæstræ and gymnasia served. In earlier times these two must be distinguished. In the palæstra, young men practised wrestling and boxing. As these arts were gradually developed, larger establishments, with separate compartments, became necessary. Originally, such places were kept by private persons; sometimes they consisted only of open spaces, near a brook if possible, and surrounded by trees. Soon, however, regular buildings, gymnasia, became necessary. At first they consisted of an uncovered court surrounded by colonnades, adjoining which lay covered spaces, the former being used for running and jumping, the latter for wrestling. In the same degree as these exercises became more developed, these institutions grew in size and splendor.

"Minute descriptions of these establishments, by Greek authors, we do not possess, but the important facts are known to us from occasional remarks, particularly in the Platonic dialogues. There we find mentioned the *ephebeion*, where the youth used to practice; further, the bath, to which belonged a dry sweating bath, for the use of both wrestlers and visitors. The *apoduterion* was the room for undressing. In another room, the *elaiothesion*, the oil was kept for rubbing the wrestlers, and there possibly this rubbing itself took place. In the *konisterion* the wrestlers were sprinkled with sand, so as to give them a firmer hold on each other. The *sphairisterion* was destined for games of ball, while other passages, open or covered, were used for practice in running, or simply for walking. A particular kind of covered passage were the *xustoi*, which had raised platforms on both

sides for the walkers, the lower space being used by the wrestlers.

"At Athens the gymnasia were public institutions supported by public or private means, at which *epheboi*, youths old enough for military service, and men spent a part of the day in athletic exercise and in instructive and social intercourse. These were the *Lukeion* (Lyceum), the *Kunosarges*, the *Akademia* (Academy), the *Ptolemaion*, the splendid gymnasium of Hadrianus, and the small gymnasium of Hermes. The number of palæstræ at Athens was still greater. They were all private institutions kept by single *paidotribai*, and destined for the athletic education of boys only. In smaller cities the joint practice of youths and men was frequently inevitable."

The teachers of gymnastics among the Athenians were known as *gumnastai* and *paidotribai;* the former having to superintend the general development and training of the body, while the latter directed the single exercises. The *sophronistai* were responsible for the good behavior of the boys. The whole *gumnasion*, and all its teachers, was under the charge of a superintendent, termed the *gumnasiarchos*. The principal exercises taught in the palæstra and the gymnasium were running, leaping, wrestling, throwing the discus, throwing the spear, boxing, and the pancration, a combination of boxing and wrestling.

Various games of ball were in vogue, and much attention was paid to swimming and bathing. It is held by some that the Greeks at times engaged in boat-racing. If so, the sport formed no part of the athletic canon. The Greek training was severe; that of candidates for the Olympic games lasting for ten months. It was mostly conducted in the open air, often under a blazing sun. In their practice exercise and in their matches, the athletes were naked. They were oiled and sanded before their exercise, and scraped with a strigil, shampooed and bathed after it. Their dietary was also carefully regulated. So, too,

were their hours of sleep and practice. In none of our five national systems of exercise has "training" been carried to so high a pitch, or been so well ordered, as it was among the Greeks. So far as I know, no attention was paid to dietetic rules by the contestants in either knightly or popular games in the Middle Ages, and "training," in the sense in which it is employed by those who are addicted to British sports, has practically no followers in Germany or Scandinavia, outside the ranks of professional acrobats and a few Anglo-maniacs.

The Greeks used but little apparatus, either in their preparatory exercises, which were made in the palæstræ and gymnasia, or in their match-games, which usually, as at Olympia, took place in the *stadion*, or some other uncovered place; and such apparatus as was used was of the simplest kind. The spear, the discus, possibly the vaulting pole, the *halteres* and *himantes*, which are the prototypes respectively of our dumb-bells and boxing-gloves, pretty nearly exhaust the list of Greek gymnastic machines. The Grecian *halteres*, somewhat resembling our dumb-bells, were used by jumpers, who carried one in each hand when in the act of leaping. The Romans used *halteres* much as we use dumb-bells, for building up the muscles of the arms.

Machine or apparatus gymnastics are mostly of modern origin. Jahn invented the parallel bars, and the horizontal bar. The stall bar, the swinging ladder and the "Bom" are Swedish devices. Most of the ropes, ladders and poles used in gymnastic climbing have been adapted to modern uses, and cannot be classed, generically, as distinctively Swedish or German. Boucicaut, a famous French mediæval champion, could, we are told, ascend and descend ladders, using his hands alone, while in full armor. The physical training of page and squire, was chiefly directed to making him a good horseman, and to rendering him skilful in the use of sword, lance and maule, while in

the saddle: and the newly dubbed knight must be able to leap into the saddle while in full armor. The aspirant to knighthood practised, with his sword, at posts and the Saracen's head; and learned lancemanship by tilting at the ring and the quintain; beyond these he had little need for fixed apparatus. The gymnastic horse of wood, so popular everywhere among heavy gymnasts, to-day, is clearly of chivalric origin. I am not able to say when it was first used to supplement or to supersede exercises upon the living animal, but mention is made of it in the sixteenth century. As might be expected, we shall find more "mediæval survivals" in the exercises and tactics of the modern cavalryman than in those of the infantryman.

But the Greek gymnasium was much more than an aggregation of wrestling-pits, running-tracks, exercise-halls, and bathing-establishments, surrounded by colonnades and shady walks. The Athenian gymnasia were clubs and schools as well, provided with lecture-halls and quiet nooks to which the elders of the city resorted for instruction and social intercourse. It is noteworthy that, even among the Greeks, the word *palæstra* came to mean a school, and that the most highly educated of modern peoples, the Germans, designate the highest of their secondary schools by the term *gymnasium*. The French word *Lycée*, derived from Lyceum, the name of the gymnasium in which Socrates and Aristotle taught philosophy, is used in the same sense as the German *gymnasium*. Antisthenes, the founder of the Cynic school of philosophy, taught in the Kynosarges gymnasium. The masters in art and science, the world over, are content to be styled Academicians, in memory of the Academy of Plato, which was one of the public gymnasia of Athens.

The most notable athletic and gymnastic gatherings of our own day are, in a sense, more truly popular than were any of their forerunners; since the masses take

part in them, not only as spectators, but as contestants. The great festivals of the German Turners, also, which recur every few years, are peculiarly folk-festivals. They, and the great events of the athletic year in England, — such as the University Boat-Race, the Royal Henley Regatta, the Eton and Harrow, and the County Cricket-Matches, the Lilliebridge Athletic-Sports, and the Foot-Ball Match between the All-Scotland and All-England Elevens, — each and all, excite great interest, and draw immense crowds of spectators. The chivalric tourneys were often signalized by gorgeous pageants, elaborate merry-makings, and stately ceremonials, and were graced by throngs of on-lookers, both gentle and simple. But the sacred games of the Greeks surpassed them all as regards significance and splendor.

Olympia, in Elis, where the most famous of the Grecian contests were held for five days, every fifth year, at the time of the first full moon after the summer solstice, was a festival city. As I pointed out in a former lecture, it not only included a stadion (or race-course), two gymnasia and a hippodrome, but was adorned with temples and other public buildings, with monuments to kings and heroes, with treasure-houses, and with hundred of statues erected to the memory of victors in the games. Here assembled, not only the flower of Greek manhood, but also delegates of empires and cities, and throngs of spectators from distant shores, to witness the athletic contests, the chariot-races, and the competition between poets, dramatists and artists; and to participate in the sacrifices and processions in honor of Zeus to whom the place and festival were sacred. Athletics and gymnastics have never played so large and dignified and prominent a part in the life and affairs of any nation as they did among the Greeks. We may not hope that any modern people will ever reproduce, on a large scale, the essential features of Grecian physical training; for the same reasons that forbid us to look for the rise of a new Sparta or a second Athens.

Grecian physical training was of an empirical nature; for the Greeks, even the best of them, had next to no scientific knowledge of the human body. Plato's physiology is clotted nonsense. Aristotle looked upon the muscles as mere padding for the bones, not suspecting them of being the organs of motion, and held that the chief function of the brain was to cool the heart. But the Greeks were rare empiricists, and saw with wonderful clearness what lay within the range of their unaided vision. Having insight and experience, loving beauty of form, being favored of Heaven as to climate and leisure, their gymnasiarchs and athletic trainers produced types of manly beauty and health which have never been surpassed. The dominant note in the history of the Middle Ages is one of warfare. Education, accordingly, was conceived and carried out with a view to what may be called the technical preparation of the young ecclesiastic or noble for the post of under-officer, either in the cohort of a Lord Spiritual or of a Lord Temporal. Though very much has been done in the last hundred years towards making exact sciences out of the art of war and the art of healing; the art of teaching is still, in the main, characterized by empirical methods, especially among English-speaking peoples. This is particularly true of bodily education.

The mediæval and British types of physical training resemble the Grecian in being natural growths, which smack of their native soil, rather than manufactured productions, bearing the tool-marks of their designers and artificers. It is characteristic of modern systems of gymnastics that they have been devised chiefly for remedial or pedagogical ends; and, furthermore, that we have comparatively full and trustworthy accounts of the men and measures whereby their rise and development have been determined.

Enthusiastic worshippers of classical antiquity and writers on education — especially at such times as the Renaissance, the Reformation, and the revolt of the

Realists against merely humanistic training in the last quarter of the eighteenth century — have shown a marked tendency to laud and magnify the physical training of the Greeks. Indeed, did time permit, we might readily trace the influence of that training upon some quite recent forms of school gymnastics, since there have been repeated attempts, in Germany, to domesticate the exercises of the Grecian *Pentathlon*, namely, running, leaping, spear-throwing, casting the discus and wrestling. Still the fact remains that no general or very considerable revival of Greek athletics and gymnastics has occurred within five hundred years. Though mailed knights, and the martial exercises which they most affected, have been "knocked out," so to speak, by the anathemas of the Church, and other more modern explosives, the code of the soldier and the gentleman is still colored by the traditions of chivalry which favor such bodily accomplishments as riding, hunting, fencing and dancing. The "fagging" of British schoolboys is a survival from the period when the training of the young noblemen in "courtesy" included the performance of many tasks that we hold to be menial. Many of the customs of German university students, especially those which regulate their duelling, are reminders of the times when swordmanship formed a necessary part of every gentleman's education. In the sixteenth and seventeenth centuries and late into the eighteenth, a class of special schools, termed *Ritterschulen* or *Adels-Akademien*, were maintained in various parts of Europe, but particularly in Germany, for the education of the sons of the nobility. In such schools instruction in riding, sword-play, dancing and leaping was regularly given; swimming was much practised, and sometimes wrestling.

Although the reformers, Luther, Melancthon and Zwingli, urged the revival of gymnastics as a part of the education of all classes of youth, it was not till the last decades of the last century that any considerable attempt was made to systematize and enforce gymnas-

tic training in Germany. The attempt was made by Basedow, who was a leader in the educational reforms instituted by the so-called Philanthropists, who strove to carry Rousseau's views in education into effect, or, in other words, "to manage it so that the training of the mind and body shall serve to assist each other." The pupils in the Philanthropinum, which Basedow established at Dessau, in 1774, were taught wrestling, running, riding, and dancing, besides carpentry and wood-turning. They were also taught the elements of human anatomy and physiology. The Philanthropists employed both gymnastic and industrial exercises in their efforts to secure the physical training of their pupils. Therein they showed more wisdom than do most of the advocates of manual training among us, who neglect the training of the trunk and limbs for the sake of the hand and fingers. The so-called "Dessau Pentathlon" consisted of running, jumping, climbing, exercises in balancing, and carrying weights. Some of our Young Men's Christian Association authorities have recently promulgated a "Pentathlon," which is a most un-primitive Christian proceeding.

In 1784, Salzmann, who had been one of Basedow's assistants at Dessau, established a Philanthropinum at Schnepfenthal, near Gotha. The three most eminent names in the list of men identified with the revival and upbuilding of German gymnastics are those of Guts Muths, Jahn and Spiess. Each was a teacher and writer. Jahn was an agitator and popular leader in addition. Guts Muths lived from 1759 till 1839, Jahn from 1778 till 1852, and Spiess from 1810 till 1858. Schnepfenthal has been termed "the cradle of German Turning." Guts Muths labored here as teacher from 1785, till his death. Soon after Guts Muths entered Schnepfenthal, in 1785, Salzmann intrusted him with the direction of the five exercises brought from Dessau. "All that I found out from ancient usages," says Guts Muths, "from the historical remains of earlier and later antiquity, all that reflection and

sometimes chance offered to me, was brought forward for the sake of amusing experiments. Thus the chief exercises increased. Thus originated, after seven years' experiments, in the first edition of my 'Gymnastics for the Young' (1793), my first attempt to call attention to a subject that had been quite forgotten." His *Gymnastik für die Jugend* was the first German manual of gymnastics. Guts Muths did much to prepare the way for Jahn, the "Father of Turning," and Spiess, the "Founder of German school gymnastics and the creator of gymnastics for girls." Inspired by the example of Guts Muths, many private and a few public teachers introduced gymnastics into their schools. In 1799, Nachtegall, a follower of Guts Muths, established a private gymnastic institute in Copenhagen. The Danes were the first people in Europe formally to adopt the new gymnastics for use in schools and the army. Ling, the founder of Swedish gymnastics, while a student in the University of Copenhagen (1799–1804), had his first lessons in gymnastics from Nachtegall.

Guts Muths, at first, defined *Gymnastik*, a term which was rejected by Jahn but retained by Ling, as "work in the garb of youthful pleasure or merriment." Later he defined gymnastics as "a system of exercises having bodily perfection for their aim." Jahn worked mostly in the spirit of Guts Muths' first definition, Ling in the spirit of the second. It is quite possible, too, that Ling received some impulse towards his laborious studies of the laws of bodily movements from the following utterance of Guts Muths: "I know well enough," says the latter, "that a genuine theory of gymnastics should be based on physiological principles, and that the practice of every single movement should be governed by a consideration of the individual peculiarities of the body." Guts Muths divided "pedagogical physical exercises" into three departments: (1) gymnastic exercises, (2) manual training, and (3) youthful plays. His distinctively

gymnastic exercises were: free and pole jumping, short and long-distance running, casting the stone, wrestling, climbing, "balance-movements," lifting and carrying of weights, dancing and marching movements.

That gymnastics, under the name of *Turnen*, became a popular institution and a potent factor in national development, was mainly due to Jahn, a much more aggressive man than the quiet "philanthropist" of Schnepfenthal. Jahn's strong and rugged nature, and restless, passionate spirit, qualified him for popular agitation and leadership in the troublous years between the battle of Jena, in 1806, and the Prussian War of Liberation, in 1813. Jahn seized the idea of making bodily training a force in national regeneration and education, and dreamed and wrote and plotted for a free and united Germany. In 1810, when he was a teacher of boys in one of the city schools of Berlin, Jahn began his career as a gymnasiarch by accompanying a few of his pupils into the woods and fields for the purpose of engaging in youthful sports and exercises on holiday afternoons. His first *Turnplatz* was opened in the *Hasenheide*, a pine forest in the outskirts of Berlin, in 1811. The movement became extraordinarily popular, and young and old flocked to the gymnastic grounds. The Jahn Turning was rudely systematized; but slight use was made of "free movements," which were first given a prominent place in German gymnastics by Spiess. The Turners were organized in squads, according to their age and strength. Feats in agility, strength and endurance were performed by Jahn's assistants, called *Foreturners*, and the rest of the squad took turns in "following suit," to use a term common among New England boys. Jahn employed the exercises of Guts Muths, and, with the help of his foreturners, devised many new forms of exercise and apparatus. Prominent among the latter are the horizontal and parallel bars, and certain machines to facilitate exercises in climbing. The Turners were active

in the successful uprising against the French in 1813, so that turning became more than ever popular, throughout Germany in 1814 and 1815. During the political troubles which arose after the War of Independence, Jahn and the Turners were denounced as liberals and enemies of the State. In 1819 the turning-grounds throughout Prussia, and in most of the other German States, were closed by the police. Jahn was imprisoned from 1819 till 1825; but he lived to see gymnastics introduced into the Prussian schools, by order of the King, in 1842; and before his death, in 1852, Turners' societies were once more in a flourishing condition throughout Germany.

At the present day German gymnastics include the popular gymnastics of the *Turnvereine*, school gymnastics, and military gymnastics, the latter being a modified form of school gymnastics. School gymnastics include free movements, light gymnastics, or exercises with light apparatus such as wands, dumb-bells, and clubs, and *Gerätübungen*, or exercises on the more difficult gymnastic machines. Spiess introduced "class" and "order" gymnastics, thereby making it possible for the ordinary teacher of a school class to teach gymnastics to all his pupils, in the same way that other branches of study are taught. In the army and in the schools, exercises of all sorts are executed by the class or division at the word of command. In the *Turnvereine*, free and class gymnastics are also conducted in the manner alluded to above; though in heavy gymnastics the foreturner feature is retained. Both Germans and Swedes have outgrown the childish practice, so common in America and England, of teaching gymnastics by means of memorized and musical drills. Indeed, I doubt if German or Swedish teaching was ever hampered by such inept and ineffectual methods. Special normal schools for the training of teachers in gymnastics exist in most of the German States; and a large proportion of the elementary and secondary schools are provided either with a well-

equipped gymnasium, *Turnhalle*, or else a *Turnplatz* out of doors. Many schools have both. In many of the larger and higher schools, special teachers of turning are installed; while in the elementary schools, for the most part, gymnastics are taught by the class-teachers. But usage in this regard is not uniform.

School and military gymnastics have grown to a large extent out of popular gymnastics, or *Volkturnen*, which still retains its place as the most distinctive branch of German physical training. The union of the German turning societies is known as the *Deutsche Turnerschaft*, an organization of some thirty years' standing. On January 1, 1891, out of 4,763 turnvereine in Germany and Austria-Hungary, 4,252, in 3,603 localities belonged to the Turnerschaft, whose total membership numbered 421,000 men and boys over fourteen years. Of the total membership (which amounts to 1.6 per cent. in a population of more than twenty-five millions), more than one-half are classed as "active turners" and ten per cent. as skilled gymnasts or "foreturners." In 1880, the Turnerschaft numbered 170,315 members of whom 86,159 were active turners. It is almost as usual to find turnvereine among Germans in foreign lands, as to find cricket and foot-ball clubs among British colonists. Turning societies flourish in the United States, Brazil, China and Australia, as well as in all European countries. In the United States, the principal association of the turners is the North American Turnerbund, which has a membership of over 35,000. It may be noted in passing that the Turnerbund, which dates from the revolution year of 1848–49, is much more highly organized for social and political purposes than the German turners ever were; that it has been influential in securing the introduction of physical training into the public schools of Kansas City, Cleveland and Chicago; and that it maintains a larger number of gymnasia, and a fuller and more competent corps of teachers of gymnastics than do all our colleges put together.

Having spoken at length, in a previous lecture of Ling and his work, I shall confine myself, in this connection, to a rather summary treatment of the Swedish system of educational gymnastics, foregoing all consideration of the Swedish *Sjukgymnastik*, or movement treatment. The Swedish *Friskgymnastik* differs so widely as to its origin, aims and methods from the German *Volkturnen*, that the two are rather to be contrasted than compared. Popular gymnastics have never occupied the foreground in Sweden, and have assumed extremely little prominence, even in the background, till within rather recent years. In Norway, popular gymnastics are only semi-Swedish. In comparing German and Swedish school gymnastics, the distinction between an artisan's kit of tools and an instrument of scientific precision suggests itself. Swedish gymnastics owe their distinctive features of simplicity of form, compactness and balance of parts, finish and precision of method, to Ling and his successors at the Royal Central Gymnastic Institute in Stockholm, which has been maintained by the Crown as a normal school, for the education of civilian and military teachers of gymnastics since it was opened, at Ling's instance, in 1814. Ling's principal writings are poetical; but he had more of the patient, critical, scientific spirit than Jahn, and did his best to discover the physiological and pedagogical laws which should underlie every rational scheme for the bodily training of children and youth. His natural impulses, and the exigencies of his position as an official teacher of teachers and of military cadets, combined in leading Ling to adopt simple, direct and orderly measures. He made use of both free and class exercises before Spiess introduced them into German gymnastics. Apparatus gymnastics, though regularly employed by the Swedes, are given less prominence than is accorded them by the Germans. Certain gymnastic machines which are favorites with the Swedes are not used in Germany, and *vice versa*. Gymnastic games and fencing are em-

ployed both by Swedish and German teachers of school gymnastics. Much less care and attention have been given in Germany than in Sweden to physiological considerations, in the selection and arrangement of gymnastic movements; therefore the Swedes reject many forms of exercise as useless or injurious which pass muster in Germany. For example, the Swedes discard exercises that tend to constrict the chest, those that require the breath to be held, and those producing continued pressure on the larger vascular or nerve trunks. One of their most stringent rules is, that all movements should help and not hinder full, free and regular breathing. Swedish gymnastics surpass all other forms of pedagogical gymnastics, in the care taken in co-ordinating the exercises belonging to a single "day's-order," not only with regard to each other, but also with regard to the "day's-orders" which have been practised, and the "day's-orders" that shall follow. By means of the "day's-order" or "table" and the principle of "gymnastic progression," which they alone have worked out and adopted, the Swedes are enabled to order and vary their school gymnastics, from day to day, from month to month, and from year to year, in a graded series. By this means continuity is secured in the instruction; and the pupils, of whatever age or condition of health, are advanced from simple, easy, and absolutely safe exercises, to those that are complicated, difficult, or comparatively dangerous. Class-leaders and memorized drills have no place in instruction of this kind. All exercises, whether by a full class or by a squad, are executed at the word of command. Continuous, progressive, and comprehensive gymnastic training cannot be secured by mere imitation of a leader, or by executing memorized exercises over and over again. Change and variety are necessary, and must be had. They are best secured in school gymnastics, by recognizing the laws of physiology and by following the principles of sound teaching.

Compared with teachers of gymnastics in any other country, those of Sweden are a small and highly trained corps. From its inception, the majority of the pupils of the Central Institute have been young officers in the army and navy, so that teachers of gymnastics in Sweden hold a better social position than elsewhere. Under special circumstances one may, by passing the required examinations, be licensed to teach without taking the course at the Central Institute, a course be it said, more extended, comprehensive and severe than is the case in any other European normal or military gymnastic school. The influence and traditions of the Central Institute are paramount in all branches of Swedish gymnastics, and have made them what they are.

Hitherto, school gymnastics in Switzerland, Austria, Belgium, Denmark, Russia, Italy, England, and even in France, have followed or resembled German school gymnastics in the main; but in France, Denmark, England and Russia a tendency to adopt or approximate towards Swedish methods has declared itself, recently. In my opinion, the Swedish systems are better adapted to the needs of school children, between the ages of seven and fifteen, than any other. For boys above fifteen and collegians — at any rate in England and America — I am inclined to think an admixture of German forms of exercise will be found advantageous; but I would have them grounded in Swedish gymnastics to begin with.

Speaking broadly, the muscular and nervous tissues, well termed the "master tissues," constitute the executive or working mechanism of the body; and the chief function of all the other tissues of the body is to serve either as their purveyors or scavengers. The structural integrity and functional power of the purveyor and scavenger tissues are indirectly promoted by muscular activity; but the most important effects of muscular exercise are, (1) the attainment or maintenance of normal size and strength by the master tissues, and

(2) the acquirement of correct and economical habits of neuro-muscular action. The ends of physical training, then, are hygienic on the one hand and educational on the other. No comprehensive system of physical training can be considered safe or rational in which these ends are not clearly recognized and intelligently provided for — through the adaptation of its exercises to the varied and varying wants and requirements of the individuals to be trained, in respect to their sex, age, strength, mental capacity and calling in life. The results which should be secured by such a system are briefly these: Erect and graceful carriage of the head and trunk; a broad, deep, and capacious chest in which the heart and lungs, developed to their normal size and strength, shall have free, full and regular play; square shoulders; a straight back; fully-developed and well-rounded limbs and the power to execute with ease, precision, and economy of force, such movements as are involved in the simpler exercises of strength, speed and skill, and in ordinary gymnastic and athletic feats.

In general, we may say that the Grecian gymnastics and athletics, and the martial exercises of the ancient and mediæval Gauls and Teutons were of a character to affect chiefly the fundamental or earliest developed neuro-muscular mechanisms,[2] which constitute "the coarse adjustment" of the body. The more massive bodily virtues of strength, endurance and speed are promoted by popular sports; whereas dexterity, address, sleight-of-hand, quickness and accuracy of eye and hand require more specialized and complicated forms of exercise for their development. In other words, British sports are insufficient for the purpose of giving a complete training to the fundamental and accessory groups of muscles, and require to be supple-

[2] For a fuller discussion of the effects of exercise on the nervous system see "On the Physiology of Exercise," the Boston Medical and Surgical Journal, March 31 and April 7, 1887; and "General Exercise," Hare's "System of Practical Therapeutics," vol. 1, 1891, by the writer.

mented by such drill as is afforded by the systematic gymnastics of the Swedes and Germans. For purely educational ends no system of physical training has yet been devised which is equal to the Swedish school gymnastics. American physical training will remain a thing of shreds and patches, unless the promoters and governors of our educational institutions shall set themselves to learn and to apply the teachings of science and experience with regard to the nature, scope and results of physical education.